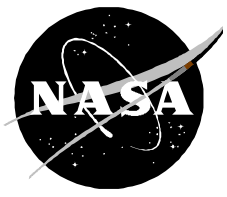
REVIEW REPORT

Review of
The Aeronautics and Astronautics
Coordinating Board (AACB)
DoD/NASA Cooperation Initiative
P&A-98-003

September 28, 1998



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ACRONYMS

AACB	Aeronautics and Astronautics Coordinating Board
DoC	Department of Commerce
DoD	Department of Defense
GAO	General Accounting Office
IPT	Integrated Product Team
NASA	National Aeronautics and Space Administration
NOAA	National Oceanic and Atmospheric Administration
OIG	Office of Inspector General

National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001

SEP 28 1998

Reply to Attn of W

TO: AD/NASA Cochair, Aeronautics and Astronautics Coordinating Board

FROM: W/Assistant Inspector General for Partnerships and Alliances

SUBJECT: Final Report on Review of The Aeronautics and Astronautics Coordinating Board (AACB) DoD/NASA Cooperation Initiative, P&A-98-003

The subject final report is provided for your use. Appendix J of the report lists the full distribution. Please refer to the executive summary for the overall review results. Your comments and the comments of the Deputy Assistant Secretary of Defense, C3ISR and Space Systems, Office of the Assistant Secretary of Defense, on our two recommendations are included in the report. We consider the recommendations open for reporting purposes.

We appreciate the courtesies extended to our staff during the review. If you have any questions concerning the report, please call me at (202) 358-2162.

Lewis D. Rinker

Enclosure

cc:
ID/R. Williams
JM/D. Green
W/R. Gross

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REVIEW OF THE AERONAUTICS AND ASTRONAUTICS COORDINATING BOARD (AACB) DOD/NASA COOPERATION INITIATIVE

EXECUTIVE SUMMARY

BACKGROUND

The AACB is a senior management review and advisory body internal to the Department of Defense (DoD) and the National Aeronautics and Space Administration (NASA). It was chartered by interagency agreement in 1960, in part, to help meet The National Aeronautics and Space Act of 1958, requirement for cooperation among all agencies of the United States to avoid duplication of effort. The AACB meets annually, with meetings cochaired by the DoD Under Secretary of Defense (Acquisition and Technology) and the NASA Deputy Administrator.

Prompted by planned and expected future budget reductions at both agencies, in June 1995, DoD and NASA agreed to pursue an AACB cooperation initiative. This initiative was to identify actions that could lead to significant reductions in investments and operating costs. Because areas for cooperation included subjects of interest to the Department of Commerce (DoC), DoC was asked and joined the initiative. The AACB issued a final report in May 1996, containing 34 recommendations to improve the efficiency and effectiveness of operations and to reduce costs. The agencies agreed to implement these recommendations. *Appendix A* contains additional background information.

OBJECTIVE

The objective of the review was to determine the extent of implementation of the AACB recommendations and the savings realized. *Appendix B* contains additional information on the scope and methodology of this review.

RESULTS OF REVIEW

The AACB Cooperation Initiative has been successful in improving Government operations and saving more than an estimated $1 billion for DoD and $45 million for NASA.[1] However, actions to implement 18 of the 34 recommendations are incomplete (see *Appendix E* for details). The window of opportunity to implement some recommendations is limited.

Actions are not complete because of insufficient management oversight and commitment. Specifically, DoD and DoC did not appoint personnel to standing AACB panels to oversee

1 These amounts were reported by NASA organizations to NASA's Deputy Administrator. We did not verify the accuracy of any reported savings. The DoD does not agree with the reported savings, but acknowledges that the AACB Cooperation Initiative has resulted in benefits. The DoD did not offer a total savings estimate.

implementation, the AACB did not meet to manage the process, the DoD AACB Cochair retired and appointment of his replacement was delayed, and funding commitments necessary to implement some recommendations were not fulfilled by DoD and NASA. In addition, pending decisions on a subsequent internal DoD reform initiative that includes reevaluation of how DoD partners with other agencies, including NASA, have caused DoD to defer actions.

The remaining open recommendations offer DoD, NASA and DoC potential additional opportunities to achieve significant operating improvements and savings. These opportunities include (1) using excess DoD rocket motors to launch small scientific spacecraft (2) conducting joint spacecraft flight demonstrations to reduce development and launch costs, and (3) developing standardized spacecraft and ground control systems to permit interoperability, resulting in improved support, increased support reliability, and reduced tracking costs.

Recommendations in the standardization area require timely action or the opportunities for savings could be lost because:

- The DoD, NASA, and DoC soon will be designing and purchasing spacecraft and ground control systems that will represent a substantial portion of the active systems through the year 2020.
- Frequency spectrum that could be needed for a common federal communications band is vulnerable to sale at public auction.

RECOMMENDATIONS AND MANAGEMENT'S RESPONSE

We recommended that (1) NASA should plan with the DoD the implementation of the open recommendations and (2) ensure that NASA's share of required funding is made available to implement the recommendations. The NASA Deputy Administrator agreed to consult with the DoD AACB Cochair, when a Cochair is selected, on implementing the open recommendations. The NASA Deputy Administrator will use the agency budgeting process to determine funding for implementing the recommendations. The DoD Deputy Assistant Secretary of Defense (C3ISR and Space Systems), Office of Assistant Secretary of Defense, agrees that the recommendations should be reviewed, updated and implemented where appropriate.

FINDINGS AND RECOMMENDATIONS

COOPERATION INITIATIVE SUCCESSFUL BUT MORE BENEFITS CAN BE REALIZED

The AACB Cooperation Initiative has been a successful partnership between DoD, NASA and DoC. The initiative developed 34 recommendations that have resulted in improved Government operations and estimated savings of more than $1 billion for DoD and $45 million for NASA.[2] However, due to insufficient management oversight and commitment, implementation on more than half of the recommendations is not complete, two years after agreement to take actions. The remaining open recommendations offer additional potential opportunities to significantly improve operations and reduce costs. However, the window of opportunity to implement some of these recommendations is limited.

Recommendations implemented have resulted in significant benefits to the Government

Recommendations implemented have resulted in benefits such as:

- DoD will operate the Inertial Upper Stage for NASA's Advanced X-Ray Astrophysical Facility with existing DoD capability, instead of NASA establishing a control center capability. This is expected to save NASA an estimated $1 million.[2]

- After DoD and NASA compared the costs for launching DoD payloads on NASA's Shuttle versus on a commercial Titan IV, the Titan IV supplier reduced the DoD total contract price for 41 launches by more than $1 billion.[2]

- DoD and NASA will use a combination of NASA's Tracking and Data Relay Satellite System and DoD P-3 aircraft, to provide communications support for expendable launch vehicle launches, instead of using DoD's Advanced Range Instrumentation Aircraft. This change will save DoD an estimated $14 million on planned Titan IV launches and save DoD, NASA, or DoC approximately $650,000 per Atlas launch.[2]

Cooperation is required by law

The National Aeronautics and Space Act of 1958, 42 U.S.C. 2451, (Space Act) requires, "The most effective utilization of the scientific and engineering resources of the United States, with close cooperation among all interested agencies of the United States in order to avoid unnecessary duplication of effort, facilities, and equipment" (emphasis added).

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2 These amounts were reported by NASA organizations to NASA's Deputy Administrator. We did not verify the accuracy of any reported savings. The DoD does not agree with the reported savings amounts, but acknowledges that the AACB Cooperation Initiative has resulted in benefits. The DoD specifically disagreed that savings on the Titan IV contract resulted from the AACB activity. The DoD did not offer a total savings estimate. DoD's comments are included in *Appendix I* of this report.

Implementation of the recommendations is incomplete

Actions to implement 18 of the 34 recommendations are not complete (*Appendix E*, Status of Recommendations, contains details). These recommendations were approved for implementation more than two years ago, at the AACB meeting April 29, 1996. Incomplete actions include:

- DoD was to demonstrate the capability of excess rocket motors to launch small scientific orbital payloads. DoD has conducted sub-orbital launches, but has not demonstrated an orbital launch. Successful demonstration of this capability could offer NASA and DoD a potential opportunity to reduce orbital launch costs.

- DoD and NASA agreed to joint planning and execution of spacecraft technology flight demonstrations. While progress has been made in planning, no joint flight demonstrations have occurred. By DoD and NASA both demonstrating new technology on one launch instead of two, both agencies can significantly reduce their launch costs.

- DoD and NASA agreed to develop standardized spacecraft control systems. While some progress has been made, each agency continues towards design of autonomous systems for the next generation of spacecraft. Standardization presents an opportunity for the Government to improve the efficiency and effectiveness of spacecraft control operations and to significantly reduce costs.

Actions are not complete due to insufficient management oversight and commitment

The Cooperation Initiative relied upon an oversight process and resources commitment to ensure implementation of the recommendations. The AACB final report states:

> "Oversight on behalf of the AACB will be provided by its four standing panels on Aeronautics, Launch Systems Development, Spacecraft Technology, and Space Communications and Operations. Progress in implementing the IPTs' recommendations will be an element of the annual report to the AACB required from each panel."

According to the NASA AACB Executive Secretary, NASA designated personnel to serve on the panels, but DoD only designated personnel for one panel.

Further, the AACB charter states:

> "The Board shall meet at least annually to receive summary reports from the Panels..."

However, the AACB has not met since April 29, 1996, due to a lack

of new substantive issues to discuss and due to personnel and operating changes at DoD. At DoD, the Under Secretary of Defense (Acquisition and Technology), who is the DoD AACB Cochair, retired. A replacement was not appointed for an extended period of time. In addition, pending decisions on an internal DoD reform initiative announced in November 1997, that includes reevaluation of how DoD partners with other agencies, including NASA, have caused DoD to defer action on some recommendations. Moreover, no AACB meetings have been scheduled.

The AACB Cooperation final report also concluded:

> "To achieve these benefits will require continued commitment..."

However, in some cases funding required to implement recommendations has not been made available by DoD or NASA. For example:

- DoD and NASA have not jointly funded a total estimated $4.5 million efficient radio frequency modulation techniques development activity needed to standardize spacecraft communications.

- DoD and NASA have not jointly funded a total estimated $13 million Global Positioning System receiver development effort needed to standardize spacecraft control systems.

NASA personnel responsible for implementation felt that management funding decisions have focused upon recommendations offering near-term cost savings, while those with longer-term savings that also require current funding have received low priority.

Completing implementation offers DoD, NASA and DoC potential additional significant benefits

Completing implementation of the recommendations could produce significant additional benefits to the Government:

- If some DoD excess rocket motors are used to launch small scientific orbital payloads, DoD can avoid storage and destruction costs and the Government could avoid buying commercial launch services, saving more than an estimated $3 million per launch.[3]

- Joint spacecraft technology flight demonstrations could potentially allow DoD and NASA to develop more new technology, accelerate the rate of technology development, and save an estimated $60 million per joint demonstration.[3]

3 These amounts (unverified) were provided by DoD or included in the AACB Cooperation Initiative Final Report. However, DoD has provided updated information in their response to this report (see *Appendix I*).

- The standardization of spacecraft control systems would promote interoperability between DoD, NASA and DoC. This would potentially improve the reliability of operations, enable acquisition of more or better data, and avoid duplication or permit consolidation of tracking facilities. In addition, all agencies would benefit from economies of scale in purchasing parts and systems, resulting in reduced spacecraft control system costs.[4]

Completing implementation of the recommendations would also be in compliance with the Space Act.

Implementation actions are needed now

Recommendations addressing standardization of spacecraft control systems require implementation actions now. The DoD, NASA, and DoC soon will be designing and purchasing spacecraft and ground control systems that will represent a substantial portion of the active systems through the year 2020. In addition, the Federal Communications Commission has been actively selling usage rights to frequency spectrum to generate large amounts of Government revenue. The frequency spectrum that would facilitate standardization is at risk of public auction.

RECOMMENDATION 1

The NASA Deputy Administrator should plan with the DoD Under Secretary of Defense, Acquisition & Technology, the implementation of the open recommendations.

NASA MANAGEMENT'S RESPONSE

Concur. The draft report refers to the DoD Reform Initiative announced in November 1997. We are informed that, as a part of this initiative, DoD plans to determine who will serve as the DoD Cochair of the AACB. When this individual is selected, we will consult with her or him on how to proceed in implementing the open recommendations.

DOD'S RESPONSE

The enclosed comments update and clarify some of the report findings. DoD agrees that the AACB open recommendations should be reviewed, updated and implemented where appropriate.

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4 Standardization involves spacecraft and ground control equipment, and communications protocol specifications and frequencies. The AACB Cooperation Initiative Final Report estimated (amounts unverified) that standardization of on-board spacecraft Global Positioning System data receivers alone could save $2.7 million in equipment cost per spacecraft, save $600,000 in operations support cost per spacecraft for NASA, and save $300,000 per spacecraft in ground system cost for DoD and DoC. However, DoD has provided updated information in their response to this report (see *Appendix I*).

The NASA Office of Inspector General has issued two reports identifying opportunities to share tracking resources that could provide potential significant savings in infrastructure and operations costs. Audit Report A-GO-89-004, dated September 27, 1991, addressed NASA and DoC both operating orbital tracking stations at NASA's Wallops Flight Facility. Letter Report dated April 14, 1995, addressed NASA and DoD both operating launch support tracking facilities in the Kennedy Space Center area. In both instances, lack of interoperability was cited as impeding joint operations.

EVALUATION OF MANAGEMENT'S RESPONSE

The planned actions are generally responsive to the recommendation. While concurring, the responses fail to identify planning dates for actions. We believe the NASA Deputy Administrator should contact the DoD Deputy Assistant Secretary for Defense (C3ISR and Space Systems), Office of Assistant Secretary of Defense, to establish planning dates for actions.

RECOMMENDATION 2

The NASA Deputy Administrator should ensure that NASA required funding is made available to implement the agreed upon recommendations..

NASA MANAGEMENT'S RESPONSE

Concur. As you are aware, each year there are more valid requirements for NASA funds than can be accommodated within NASA's total budget. This necessitates the prioritization of requirements and ultimately results in some requirements going unfunded. NASA has established a well defined process for performing this prioritization and recommendations requiring significant funding must compete in this process.

EVALUATION OF MANAGEMENT'S RESPONSE

The response addresses establishing funding priorities verses specific details on how implementation of the AACB recommendations will be funded. A shortfall in NASA implementation funding could jeopardize both agencies achieving the identified savings. Active involvement in funding prioritization by the NASA Deputy Administrator may be essential to realize the AACB's expected results.

ADDITIONAL BACKGROUND

The Aeronautics and Astronautics Coordinating Board (AACB) is a senior management review and advisory body internal to the Department of Defense (DoD) and the National Aeronautics and Space Administration (NASA). It was chartered by interagency agreement in 1960, to help coordinate aeronautics and space activities. The National Aeronautics and Space Act of 1958 (Space Act), 42 U.S.C. 2451, requires "...close cooperation among all interested agencies of the United States in order to avoid unnecessary duplication of effort, facilities, and equipment..." The latest revised agreement, signed October 29, 1993, is included as *Appendix C* to this report.

The AACB is cochaired by the DoD Under Secretary of Defense (Acquisition and Technology) and the NASA Deputy Administrator. Board members are personnel occupying designated positions in each organization and panels are drawn exclusively from government employees. An Executive Secretary designated by each Cochair provides administrative support and serves as a board member for executive sessions. The AACB has no full-time staff or budget. Meetings are conducted annually and as-needed to address special issues.

Prompted by planned and expected future budget and personnel reductions at both DoD and NASA, in June 1995, the agencies agreed to undertake an intensive effort to identify areas for further cooperation. On August 24, 1995, the 97th meeting of the AACB was conducted to identify areas for cooperation where the agencies might achieve significant reductions in investments and operations costs and enhance mission effectiveness and efficiencies, with emphasis on savings that might impact the fiscal year 1997 budget. Seven Integrated Product Teams (IPTs) were formed to review areas of mutual technical and operational interest. For each IPT two cochairs were appointed; one from DoD and one from NASA. Because areas for cooperation included subjects also of interest to the Department of Commerce (DoC), National Oceanic and Atmospheric Administration (NOAA) operations, DoC was asked and joined the initiative. One IPT included a DoC/NOAA Cochair and personnel. The IPTs membership are identified in *Appendix F*.

IPT progress reports were provided at the 98th meeting on February 6, 1996. At the 99th meeting on April 29, 1996, the IPTs presented 34 recommendations for improved cooperation. The AACB approved these recommendations for implementation. The AACB members are identified in *Appendix G*. The recommendations are detailed in the Final Report on the 1995-1996 DoD/NASA Cooperation Initiative The final report signature page is included as *Appendix D* and the entire report is available on the internet at *http://www.acq.osd.mil/space/aacb/index.html.*

Recommendations were in the following IPT areas and numbers:

Area	Number of Recommendations
Technology and Laboratories	10
Space Launch Activities	7
Satellite Telemetry, Tracking and Commanding[5]	9
Base/Center Support and Services	3
Major Facilities	2
Interagency Agreements	2
Personnel Exchange	1
	34

The final report concluded that the most important benefits from the cooperation initiative will derive from the basis established for future cooperation. Further, "To achieve these benefits will require continued commitment to coordination, including implementation of the many IPT recommendations..." The report called for specific organizational elements of each agency to be identified as accountable for implementation of the recommendations and oversight of implementation was charged to four standing panels on Aeronautics, Launch Systems Development, Spacecraft Technology, and Space Communications and Operations. These panels were to report on progress at the AACB's annual meetings.

[5] This IPT had three cochairs, including one from the Department of Commerce, National Oceanic and Atmospheric Administration (NOAA). The IPT also included NOAA team members.

SCOPE AND METHODOLOGY

Scope

This review encompassed (1) the background and purpose of the AACB and the AACB Cooperation Initiative, (2) the Cooperation Initiative process, (3) AACB recommended actions and expectations, and (4) actions taken and benefits realized. Review efforts focused on recommendations where implementation was not complete and significant potential benefits were available to the Government.

Methodology

We reviewed the relevant portions of the National Aeronautics and Space Act of 1958, the AACB charter, GAO reports on AACB issues, minutes of the 97th, 98th, and 99th AACB meetings, presentation material for the 99th AACB meeting, and the Final Report on the 1995-1996 DoD/NASA Cooperation Initiative. We discussed the implementation status of the recommendations with the NASA AACB Executive Secretary and obtained a recent NASA status report. We also selected 9 of the 34 recommendations for detailed review.

With the assistance of the DoD and DoC Offices of Inspector General, we discussed the status of the recommendations with the DoD AACB Executive Secretary and with relevant DoC/NOAA officials. We obtained and examined a recent DoD status report on implementation of the recommendations. For each recommendation reviewed we compared the NASA and DoD status report information, interviewed the NASA accountable individual, and obtained additional information from the DoD AACB Executive Secretary or DoC/NOAA officials, as deemed appropriate. We did not verify the accuracy of savings estimates reported by the AACB or NASA organizations.

Field Work

We performed field work from January to May 1998, at NASA Headquarters, DoD, Arlington, Virginia, and DoC/NOAA, Suitland, Maryland.

MEMORANDUM OF AGREEMENT
BETWEEN
THE DEPARTMENT OF DEFENSE
AND
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
FOR THE
AERONAUTICS AND ASTRONAUTICS COORDINATING BOARD

(This Agreement supersedes the previous agreement dated September 20, 1988)

I. BACKGROUND:

The Department of Defense (DOD) and the National Aeronautics and Space Administration (NASA) are often partners and customers of each other's capabilities in aerospace technology development and space operations. Other aspects of the DOD/NASA relationship stem from the agencies' respective interests in many of the same functional areas.

It is essential that all aeronautics and space activities which are of mutual interest to the DOD and NASA be appropriately coordinated. Where policy and program approval issues are not involved, this coordination should be conducted by officials directly responsible for program implementation. Where policy and program approval issues are involved, the exchange of information, the planning and coordination of activities, and the resolution of problems should be conducted by senior management officials having the authority to make decisions and direct their implementation within their respective organizations.

II. PURPOSE:

This agreement establishes the Aeronautics and Astronautics Coordinating Board (AACB) as the senior management review and advisory body internal to the DOD and NASA to facilitate coordination of aeronautics and space activities of mutual interest. Its organization and principles of operation are prescribed.

III. AUTHORITY:

This agreement is entered into in furtherance of the purpose of the National Aeronautics and Space Act of 1958, as amended, (42 U.S.C. 2451, et seq).

IV. ORGANIZATION:

The Under Secretary of Defense (Acquisition and Technology) and the NASA Deputy Administrator will cochair the Board.

Other Board members are -

for DOD:

Director, Defense Research and Engineering
Deputy Under Secretary of Defense (Space)
Assistant Secretary of the Air Force (Acquisition)
Assistant Secretary of the Navy (Research, Development & Acquisition)
Assistant Secretary of the Army (Research, Development & Acquisition)
Assistant Secretary of the Air Force (Space)/Director, National Reconnaissance Office

for NASA:

Associate Deputy Administrator (Technology)
Associate Administrator for External Relations
Associate Administrator for Space Flight
Associate Administrator for Space Communications
Associate Administrator for Aeronautics
Associate Administrator for Space Science
Associate Administrator for Space Access and Technology
Associate Administrator for Mission to Planet Earth

Each cochair shall designate an executive secretary directly responsible to him/her for administrative support of the Board's activities. For the DOD, the executive secretary shall be provided by the Deputy Under Secretary of Defense (Space); for NASA, by the Director, Defense Affairs Division. For the purpose of executive sessions, the executive secretaries shall be considered Board members.

Full use shall be made of existing facilities and capabilities. Staff support may be drawn from other elements of the DOD and NASA.

Panels to address aeronautics, space launch systems, spacecraft, and space operations shall be established by the Board. Additional Panels may be established for other functional areas to facilitate considerations by the Board.

Ad hoc Panels may be established for special purposes such as to address temporal topics crosscutting functional areas of other Panels. Panels shall be cochaired by DOD and NASA senior managers.

Panels are responsible for identifying and maintaining awareness of activities of mutual interest within their respective functional areas. When topics requiring special attention are identified, they will be assigned by the Board cochairs to Panels for review and recommendation. Panels shall establish Working Groups tailored to address specific issues referred by the Board. Terms of Reference and tasking for each Panel shall be approved by the cochairs of the Board.

Cochairs of the Panels will be appointed by the cochairs of the Board. Other Panel members and Working Group members will be appointed by their Panel cochairs. Panel and Working Group members shall be comprised exclusively of full-time government employees.

V. PRINCIPLES OF OPERATION:

The Board shall meet at least annually to receive summary reports from the Panels and, at the call of the Board cochairs, to address special issues.

The Board cochairs shall alternately preside over meetings. Each cochair will normally host those meetings over which he/she presides.

Only Board members, and such others as the Board cochairs specifically approve, may attend meetings.

Actions based on consideration of matters and recommendations by the Board may be taken by individual members through authority otherwise vested by virtue of their positions within their respective organizations.

Issues not resolved by the Board may be referred to the Deputy Secretary of Defense and the NASA Administrator for resolution.

The Board, through its executive secretaries, shall establish its own administrative procedures.

VI. IMPLEMENTATION:

This Agreement is effective on the date of the last signature hereon and shall remain in effect until terminated by either party through written notice to the other party.

FOR THE DEPARTMENT OF DEFENSE:

William J. Perry
Deputy Secretary of Defense

Date: 5 Nov 93

FOR THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION:

Daniel S. Goldin
Administrator

Date: OCT 29 1993

ADMINISTRATIVE CHANGE:

This memorandum of agreement has been modified, effective August 15, 1995, to reflect fact-of-life functional realignments and changes in organizational designations current as of that date.

Final Report on the 1995-1996 DOD/NASA Cooperation Initiative

Aeronautics and Astronautics Coordinating Board

May 1996

This report is available in its entirety on the internet at:
http://www.acq.osd.mil/space/aacb/index.html.

The joint Department of Defense/National Aeronautics and Space Administration Aeronautics and Astronautics Coordinating Board (AACB) recently examined joint opportunities to increase cooperation, efficiency, and effectiveness. This report documents the extensive effort carried out by seven integrated product teams constituted for that purpose.

The recommendations included in this report were approved by the AACB at its meeting on April 29, 1996. Implementation of these recommendations is in progress.

We extend our appreciation to all who participated in this activity.

Approved:

Paul G. Kaminski
Under Secretary of Defense
(Acquisition and Technology)
Department of Defense

J. R. Dailey
Acting Deputy Administrator
National Aeronautics & Space
Administration

STATUS OF RECOMMENDATIONS

RECOMMENDATIONS	STATUS[1]		
A. Technology and Laboratories	Complete	Incomplete	Reviewed[2]
1. Increased reliance in aerodynamics, flight dynamics and aerostructures		X[3]	
2. Increased reliance in specific fixed-wing technologies		X[3]	
3. Increased fixed-wing Science & Technology (S&T) integrated planning		X	
4. Increased reliance in six selected rotary-wing technology areas		X	
5. Integrated management of rotorcraft S&T at NASA Centers		X	X
6. Increased reliance in advanced spacecraft flight demonstrations		X	X
7. Jointly plan/consolidate DoD/NASA work in seven specific technology areas	X		
8. Increased reliance in advanced rocket propulsion technology		X	
9. Increased reliance in launch vehicle materials, structures & avionics	X		
10. Strengthen technology planning process		X	
B. Space Launch Activities			
1. Multi-Service Launch System for NASA missions		X	X
2. Titan II launch vehicle use for NASA near-term missions		X	
3. NASA/DoD conduct a cost comparison of Shuttle vs Titan IV launch	X		
4. Combined Expendable Launch Vehicle (ELV) program (within each agency)		X	
5. DoD/NASA joint study of launch communications support alternatives	X		
6. Develop Evolved ELV (EELV) to Reusable Launch Vehicle transition approach		X	
7. Determine NASA commitment to EELV program	X		
C. Satellite Telemetry, Tracking & Commanding			
1. Add new antenna at NOAA Fairbanks Alaska facility	X		
2. Explore near and mid-term use of TDRSS for contingency/mission relay	X		
3. TDRSS/AF mods for interoperability in long-term		X	X
4. DoD operate NASA Advanced X-Ray Astrophysical Facility upper stage	X		
5. Satellite Telemetry, Tracking, & Commanding (TT&C) frequency standards		X	X
6. Satellite TT&C standardization		X	X
7. Satellite TT&C Global Positioning System use standards		X	X
8. Enduring management structure		X	X
9. Personnel Exchange	X		

1 Unverified status as reported by NASA organizations to NASA's Deputy Administrator; except recommendations reviewed by the OIG.

2 Reviewed by the OIG.

3 Status report not received by NASA AACB Executive Secretary/status unknown.

STATUS OF RECOMMENDATIONS

RECOMMENDATIONS	STATUS[1]		
	Complete	Incomplete	Reviewed[2]
D. Base/Center Support and Services			
1. Establish ongoing process to develop and implement cooperation	X		
2. Establish oversight responsibility for base/center support/service arrangements	X		
3. Require metrics, milestones, and periodic updates to ensure goal achievement	X		
E. Major Facilities			
1. Establish alliances in six major facility areas	X		**4**
2. Establish rocket propulsion testing facility reliance agreement	X		**4**
F. Interagency Agreements			
1. Update DoD/NASA agreements and agreements listing	X		
2. Establish policy guidance for interagency agreements within each agency		X	X
G. Personnel Exchange			
1. Establish DoD/NASA exchange program on a trial basis.	X		
TOTALS	16	18	9

Summary

Actions Complete	16
Actions Incomplete/Unknown	18
Total Recommendations	34
OIG Reviewed	9

1 Unverified status as reported by NASA organizations to NASA's Deputy Administrator; except recommendations reviewed by the OIG.

2 Reviewed by the OIG.

4 Previously reviewed by the General Accounting Office, Report 98-52, "Aerospace Testing - Promise of Closer NASA/DoD Cooperation Remains Largely Unfulfilled."

IPT MEMBERSHIP LISTS

Technology and Laboratories IPT

	DoD	NASA
Cochairs	George Singley	Greg Reck - Headquarters
Vice Cochairs	Maj Gen Richard Paul	Lee Beach -LaRC
Executive Secretary	Col. John O'Pray	Larry Crawford - Hqs
ROTARY WING		
Panel Cochairs	Tom House, Army-AVRDEC	Tom Snyder - NRTC
Vice Cochairs	John McKeown, Navy-NAVAIR	Joe Elliott-Hqs
	Robert Bill, Army ARL-LeRC	John Coy-LeRC
	Wolf Elber, Army ARL-LaRC	Ruth Martin-LaRC
	Andrew Kerr. Army AFDD-ARC	Fred Schmitz-ARC
	Col. Randall Oliver, Army-AATD	William Snyder-ARC
FIXED WING		
Panel Cochairs	Dennis Distler, Navy	Jeremiah Creedon, LaRC
Panel Vice Cochairs	Keith Richey, Air Force	Carol Russo, LeRC
	Thomas Weeks, Air Force	Joseph Chambers, LaRC
	Fred Oliver, Air Force	Berwin Koch, DFRC
	Wendell Banks, Air Force	Peter Batterton, LeRC
	Lester McFawn, Air Force	Douglas Arbuckle, LaRC
	Moise DeVillier, Navy	Victor Lebacqz, ARC
	Charles Gorton, Navy	Milton Holt, LaRC
	Dennis Jackson, Navy	
	Lawrence Ott, Navy	
	Arno Witt, Navy	
	Robert Tews, Navy	
SPACE TRANSPORTATION		
Panel Cochairs	Pete Wilhelm, NCST	
Panel Vice Cochairs	Joseph Janni, PL	Earl VanLandingham, Hqs
	Tom Wilson, NRL	Rick Bachtel, MSFC
	Joel Beckmann, PL	Howard Goldstein, ARC
	Kevin Mahaffy, PL	Steve Oswald, JSC
	Lee Meyer, PL	Delma Freeman, LaRC
	Don Penn, PL	Larry Diehi, LeRC
	Wayne Pritz, PL	Len Worlund, MSFC
	Kevin Slimak, PL	Gary DuBro, Hqs
	Jess Sponable, PL	Stan Goldberg, Hqs
	Jim Wanchek, PL	Lewis Peach, Hqs

APPENDIX F

SPACECRAFT SYSTEMS

Panel Cochairs	Joseph Janni, PL	Murray Hirschbein, Hqs
Panel Vice Cochairs	Pete Wilhelm, NCST	
	Bill Adkins, NRL	Leon Alkalai, JPL
	Sue Hegg, NRL	Rich Doyle, JPL
	Steve Alejandro, PL	Satish Khamna, JPL
	Christine Anderson, PL	Carl Kukkonen, JPL
	Gene Bednarz, PL	Barbara Wilson, JPL
	Capt Thomas Brecht, PL	Brantly Hanks, LaRC
	Capt Jose Colon, PL	James Bagwell, LeRC
	Larry Crawford, PL	Henry Brandhorst, LeRC
	Alok Das, PL	James Bubro, MSFC
	Janet Fender, PL	Michael Kavaya, MSFC
	Frank Fisk, PL	Sherry Olson, Hqs
	Capt Ron Marx, PL	Ted Swanson, GSFC
	Capt John O'Hair, PL	Casey DeRaad, Hqs
	Ron Spores, PL	
	William Thompson, PL	
	Robert Vacek, PL	
	Robert Vondra, PL	

APPENDIX F

IPT MEMBERSHIP LISTS

Space Launch Activities IPT

	DoD	NASA
Cochairs	Brig. Gen. Robert Lamed, SAFA	Charles Arcilesi - HQ Code X

NASA-DoD ROLES IN THE ELV PROGRAM

Panel Cochairs	Lt Col Blake Smith - SMC/CL	Ken Worlund - NASA/GSFC
	Lt Col Mike Chorney - SAF/AQSL	Mr. Mike Benik - NASA/LERC
	LT Col Ray Ebbs - AFSPC/DOO	Mr. Kenneth Dolan - NASA/GSFC
	Col Ben James - SMC/CL	Mr. Bob Hughes - NASA/MSFC
	Maj Bill Owens - SMC/TEB	Mr. Ed Muckley - NASA/LERC
	Capt Lisa Palermo - SMC/CLN	Mr. Mark Nolan - NASA/HQ
	Lt Col Larry Rensing - SMC/CL	Mr. Lee Vanardo - NASA/MSFC
	Mr. Tim Wickenheiser NASA/LERC	

NASA ROLE IN THE EELV PROGRAM

Panel Cochairs	Bob Steele - SMC/MV	Harry Cikanek - LeRC
	Maj Tony Taliancich - SAF/AQSL	Mr. Lee Vanardo - NASA/MSFC
		Mr. Tim Wickenheiser - NASA/LERC
		Mr. Dave Bragdon - NASA/KSC
		Ms. Vicky Hall - NASA/HQ
		Mr. Uwe Heuter - NASA/MSFC
		Mr. Bruce Mylam - NASA/GSFC
		Ms. Karen Poniatowski - NASA/HQ
		Mr. Frank Spurlock - NASA/LERC

RANGE/LAUNCH BASE COOPERATION

Panel Cochairs	Lt Col Dave Froiseth, AFSPC/DOOG	Jim Costrell - HQ Code OT
	Maj Joe Boyle, SMC/CWR	Mr. Mark,Ambrose NASA/GSFC
	Maj Terry Caswell - HQ AFSPC/DRSR	Mr. Floyd CurringtonNASA/KSC
	Mr. Mike Cox - SMC/CWP	Dr. Jack Ernst - NASA/HQ
	Lt Col Al Coxe - AFSPC/DRSR	Mr. Tony Ippolito - NASA/KSC
	Lt Col Wayne Eleazer - 45 SW/XPE	Mr. Larry Kruse - NASA/KSC
	Capt Dan Griffith - 45 SPTG/CCX	Mr. Andy Leavitt - NASA/HQ
	Ms. Marci Hutson - 30 SW/XPE	Mr. Skip Mackey - NASA/KSC
	Maj Eric Mosby - SAF/AQSL	Mr. Dave Phillips - NASAIKSC
	Mr. Roger Rampley 45 CS/SCSV	Mrs. Maureen Phillips, NASA/KSC
	Maj Phil Ray - AF/XORR	Mr. Ray Stanley - NASA/GSFC
	Mr. Dave Stone - 45 SW/XPN	Mr. Troy Turbyville - NASA/KSC
	Maj Ed Zehner - 2 SLS/CC	Mr. Jack Wolfe - NASA/KSC

APPENDIX F

OPERATIONAL RLV CONSIDERATIONS

Panel Cochairs	Col Erik Anderson - SAF/AQSL	Dennis Smith - MSFC
	Mr. Chris Andrews - DUSD(Space)	Mr. Lewis Peach - NASA/HQ
	Maj Marty France - AFSPCIXPX	Mr. Tom Wilson - NRL/NCST
	Mr. Mike Jacox - PL/VT-X	
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	Mr. Bill Warren - SMC/XRT	
	Maj Tim Williams - SMC/XRT	
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DoD USE OF THE SPACE SHUTTLE

Panel Cochairs	Lt Col Jim McLeroy - SMC/OLAW	Bill Green - HQ Code MO
	Capt Eric Dube - USAF/OLAW	Mr. Bob Elsbernd - NASA/HQ
	Ms. Sue Hegg - ONR/NAVY	Ms. Kitty Havens - NASA/HQ
	Lt Col Rick Molner - USAF/NRO	Mr. Jim Higgins - NASA/LIQ
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	Mr. Dave Spencer - PL	Mr. George Levin, NASA/HQ
	Mr. Pat McCracken,NASA/HQ	
	Mr. John Oertel - NASA/KSC	
	Mr. Steve Oswald - NASA/HQ	
	Mr. Frank Pipkin - NASA/HQ	
	Ms. Marcie Swilley,NASA/HQ	

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IPT MEMBERSHIP LISTS

Satellite TT&C IPT

	DoD	NASA	DoC
Cochairs	Maj Gen Roger G. DeKok	Mr David W. Harris	Mr John Hussey

DoD Representation. DUSD (Space), NRO, Joint Staff, HQ Army/Navy/Air Force, AFMCISMC/CW, Naval Research Laboratory ~), USSPACECOM, AFSPC, AFSPACE, NAVSPACECOM, ARSPACECOM, 50 SW, DoD Joint Spectrum Center (JSC), and Defense Information Systems Agency (DISA).

NOAA Representation. National Oceanic and Atmospheric Administration National Environmental Satellite, Data and Information Service NOAA/NESDIS) and the National Polar-Operational Environmental Satellite System NPOESS) Integrated Program Office (IPO).

NASA Representation. HQ NASA Office of Space Communications, HQ NASA Office of Space Science, HQ NASA Office of Mission to Planet Earth, NASA Chief Financial Officer, NA GSFC, NASA MSFC, NASA JSC, NASA LeRC, and NASA JPL.

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Capt R. Nicole Benton (Ground Station)
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Mr Warren L. Martin (Standards)
Mr Robert A. Stiver (Satellite Control Centers)
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NASA MARSHAL SPACE FLIGHT CENTER:

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Mr Anthony T. Lyons (Satellite Control Centers)
Mr Gregory M. Wright (Satellite Control Centers)

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Mr Robert J. Sodano (Satellite Control Centers)
Mr Francis E. Snow (Satellite Control Centers)

APPENDIX F

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Mr David L. Townley (IPT Secretariat)

IPT MEMBERSHIP LISTS

Base/Center Support Services IPT*

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Cochairs	Maj Gen Marcelite J. Harris	Mr Jeffrey E. Sutton

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Mr Joseph Yuska
Ms Vivian Stilley

LANGLEY RC/LANGLEY AFB, M:
Mr Alan Farrow
Ms Judy Defendiefer

*** Additional teams and members were established by many of the field activities.**

APPENDIX F

IPT MEMBERSHIP LISTS

Major Facilities IPT

	DoD	NASA
Cochairs	Dr. Patricia A. Sanders	Mr. Richard J. Wisniewski
	Mr. John V. Bolino[1]	Mr. William W. Brubaker[2]

DoD Chief of Staff, Mr. Thomas A. Musson, IDA [3] NASA Chief of Staff:Mr. Alan E. Lew, HQ
Mr. Joseph Rech, OUSD(A&T)DTSE&E/TF

AERONAUTICS SUB-GROUP

Panel Cochair	Mr. Lewis Lundberg, Chief of Naval Operations, U.S. Navy
Panel Cochair	Mr. Roy V. Harris, Jr., Langley Research Center
	Lt Col Dallas Ferneau, HQ USAF, T & E Resources
	Mr. Charles Morris, NASA HQ
	Mr. Ted Flaherty, Naval Air Warfare Center
	Mr. William Stamper, NASA HQ
	Mr. Guy Gardner, FAA
Wind Tunnels	
	Mr. Bob Voisinet, Naval Surface Weapons Center
	Mr. Blair B. Gloss, Langley Research Center
	Mr. Roy Presley, Ames Research Center
	Dr. Keith Kushman, Arnold Engineering Development Center
	Mr. Tom Best, Arnold Engineering Development Center
Hypersonics	
	Dr. William M. Piland, Langley Research Center
	Mr. Ajay Kumar, Langley Research Center
Air Breathing Propulsion	
	Mr. Bruce Block, Lewis Research Center
	Mr. Jeff Haas, Lewis Research Center

1 Dr. Sanders replaced Mr. Bolino who retired.
2 Mr. Wisniewski replaced Mr. Brubaker at the request of Gen. Dailey
3 Mr. Rech changed jobs, Mr. Musson assumed his duties.

SPACE SUB-GROUP

Panel Cochair	Mr. Irvin E. Boyles, OUSD(A&T)DTSE&E/TFR
Panel Cochair	Dr. William M. Piland, Langley Research Center
	Mr. Ralph Spillinger, NASA Headquarters
	Mr. Steve Cavanaugh, NASA Headquarters

Rocket Propulsion

Panel Cochair	Mr. Dale Bradley, Arnold Engineering Development Center
Panel Cochair	Mr. Mark Craig, Stennis Space Center
	Mr. Joel Beckmann, Phillips Laboratory - Edwards
	Mr. J. Wayne Burton, Marshall Space Flight Center
	Mr. Harry Craft, Marshall Space Flight Center
	Mr. Mike Dawson, Stennis Space Center
	Mr. Robert Drake, Phillips Lab
	Mr. Joseph Fries, White Sands Test Facility
	Mr. David B. Harris, White Sands Test Facility
	Mr. Ned Hannum, Lewis Research Center
	Mr. Randy Humphries, Marshall Space Flight Center
	Capt Jeff Janick, Arnold Engineering Development Center
	Mr. Bill Ledden, China Lake, U.S. Navy
	Mr. William Liles, Redstone Technical Training Center
	Mr. Robert McAnnally, Marshall Space Flight Center
	Dr. Helen McConnaughey, Marshall Space Flight Center
	Mr. Lon Miller, Stennis Space Center
	Mr. Lee Meyer, Phillips Lab
	Capt Mike Santos, Arnold Engineering Development Center
	Mr. Dennis Sorges, Naval Air Warefare Center
	Mr. Lamar Thompson, Marshall Space Flight Center

Space Environmental Simulation

Panel Cochair	Mr. Brian Keegan, Goddard Space Flight Center
Panel Cochair	Mr. Dave Bond, Arnold Engineering Development Center
	Mr. Jim Johnson, Arnold Engineering Development Center
	Mr. Joe Houser, Naval Research Laboratory
	Major Nic Chando, Phillips Laboratory
	Mr. Joe Stecher, Goddard Space Flight Center
	Mr. John Harrell, Jet Propulsion Laboratory
	Mr. Lew Casey, Johnson Space Center

Hypervelocity Ballistic Range/Impact

Panel Cochair	Mr. Richard Kline, NASA Headquarters

APPENDIX F

Arc Heated Facilities

Panel Cochair Dr. Lynn Laster, Arnold Engineering Development Center
Panel Cochair Mr. Keith L. Hudkins, NASA Headquarters
Mr Jams Milhoan, Johnson Space Center
Mr. Ron Brown, Langley Research Center
Mr. Howard Goldstein, Ames Research Center
Mr. John Balboni, Ames Research Center

Business Practices

Mr. Dennis P. Botkin, NASA Headquarters
Ms. Sandy Coleman, NASA Headquarters
Mr. Joseph Rech, OUSD(A&T)DTSE&E/TFR

Wallops Island - Special Study

CDR. Steve Hill, AEGIS Combat Systems Center, Wallops Island
Mr. Lewis Lundberg, Chief of Naval Operations, U.S. Navy
Mr. George Ryan, Naval Air Warfare Center
Mr. Alexander J. Tuyahov, NASA Headquarters

Major Facilities Inventory

Mr. Harry H. Ellis, Jr., NASA Headquarters
Ms. Cheryl L. Gebhardt, NASA Headquarters
Mr. Richard Kline, NASA Headquarters

MFIPT Members at Large

Col Larry Graviss, Air Force Materiel Command
Mr. Hank Hinton, U.S. Army Test and Evaluation
Mr. Bob McCoy, NOAA
Col John O'Pray, OSD OUSD(A&T)DDR&E
Mr. Larry Rowell, Langley Research Center
Mr. Earl VanLandingham, NASA Headquarters

APPENDIX F

IPT MEMBERSHIP LISTS

Interagency Agreements IPT

DoD Cochair: Mr. Richard M. McCormick

NASA Cochair: Mr. Conrad 0. Forsythe

NASA Headquarters Mr. Richard T. Williams

Office of the Secretary of Defense Dr. Hal B. Henry

Office of the Secretary of the Air Force Major Kevin McLaughlin

Office of the Secretary of Army Mr. Ron Norris

Office of the Secretary of Navy Mr. George J. Smith

APPENDIX F

IPT MEMBERSHIP LISTS

Personnel Exchange IPT

DoD Cochair: Brig Gen (S) John F. Regni NASA Cochair: Spence (Sam) Armstrong

The IPT had representation from each military service, civilian and military personnel policy offices, headquarters staff and appropriate field units. The Air Force, Deputy Chief of Staff for Personnel, and the NASA, Office of Human Resources and Education, acted as lead offices for coordination purposes. NASA & DoD were given equal roles on the three subgroups.

Moreover, DoD and NASA used additional groups for various decision-making and field implementation purposes. For example, the Air Force convened a board to prioritize exchange opportunities and NASA established a series of telephone conferences with field personnel to monitor progress on its nomination and selection process.

Army
Lt Col Mark Jones (USA IPT action officer)
Lt Col Bill Gavora (USA IPT action officer)

Air Force
Col William Canny (USAF IPT action officer)
Major Phil Odom (USAF IPT action officer)
Lt Col Ron Popola (USAF IPT action officer)

Navy
Cpt Jay Hixon (USN IPT action officer)

NASA Headquarters
Mr. Brent Bennett
Ms. Pamala Bookman (KSC detail to NASA Headquarters)
Mr. Larry Crawford
Mrs. Casey De Raad (DoD detail to NASA Headquarters)
Mr. Stan Goldberg NASA detailee to Air Force)
Mr. Steve Golis (NASA IPT action officer)
Mr. Keith Hudkins (0SF coordinator)
Ms. Candace Irwin (staffing program expert)
Mr. Mervyn Jones
Ms. Anngienetta Johnson (OA coordinator)
Mr. Jack Kelley
Mr. George Komar (OMPE coordinator)
Mr. Mike Luther (OMPE coordinator)
Ms. Marcia Nickols (training program expert)
Ms. Linda Ragsdale (NASA IPT action officer)
Mr. Phil WaIler
Mr. Dick Williams

NASA/Johnson Space Center Mr. Harvey Hartrnan (Astronaut Program IPT action officer)
NASA/Marshall Space Flight Center Mr. Mike Moore (NASA detailee to Air Force)

AACB MEMBERS[1]

DoD

Cochair: Hon. Paul G. Kaminski, Under Secretary of Defense (Acquisition & Technology)

Mr. George T. Singley, III, Representing Director, Research & Engineering
Hon. Robert V. Davis, Deputy Under Secretary of Defense (Space)
Hon. Arthur Money, Assistant Secretary of the Air Force (Acquisition)
Vice Admiral William C. Bowes, Representing Assistant Secretary of the Navy (Research, Development & Acquisition)
Dr. Richard Chait, Representing Assistant Secretary of the Army (Research, Development & Acquisition)
Mr. Richard McCormick, Representing Director, National Reconnaissance Office
Executive Secretary: Mr. Dennis J. Granato

NASA

Cochair: Gen. John R. Dailey, Acting Deputy Administrator

Mr. Michael I. Mott, Associate Deputy Administrator (Technical)
Mr. John D. Schumacher, Associate Administrator for External Relations
Mr. Wilbur C. Tafton, Associate Administrator for Space Flight
Mr. Charles T. Force, Associate Administrator for Space Communications
Dr. Robert E. Whitehead, Associate Administrator for Aeronautics
Mr. Louis J. Demas, Representing Associate Administrator for Space Science
Dr. John E. Mansfield, Associate Administrator for Space Access & Technology
Mr. Douglas Norton, Representing Deputy Associate Administrator for Mission to Planet Earth
Executive Secretary: Mr. Conrad O. Forsythe

1 Members for 99th meeting of the AACB

NASA MANAGEMENT'S RESPONSE

National Aeronautics and
Space Administration
Office of the Administrator
Washington, DC 20546-0001

AUG 14 1998

TO: W/Assistant Inspector General for Partnerships and Alliances

FROM: AD/NASA Cochair, Aeronautics and Astronautics Coordinating Board

SUBJECT: Draft Report on Review of Aeronautics and Astronautics Coordinating Board (AACB) DoD/NASA Cooperation Initiative, Assignment No. P&A-98-003

We have reviewed the subject Draft Report transmitted by your memo of July 15, 1998. Each recommendation is addressed separately below:

Recommendation 1: "The NASA Deputy Administrator should plan with the DoD Under Secretary of Defense, Acquisition & Technology, the implementation of the open recommendations."

Response: Concur. The Draft Report refers to the DoD Reform Initiative announced in November 1997. We are informed that, as a part of this initiative, DoD plans to determine who will serve as the DoD Cochair of the AACB. When this individual is selected, we will consult with her or him on how to proceed in implementing the open recommendations.

Recommendation 2: "The NASA Deputy Administrator should ensure that NASA required funding is made available to implement the agreed upon recommendations."

Response: Concur. As you are aware, each year there are more valid requirements for NASA funds than can be accommodated within NASA's total budget. This necessitates the prioritization of requirements and ultimately results in some requirements going unfunded. NASA has established a well defined process for performing this prioritization and establishment of funding levels. Those Cooperation Initiative recommendations requiring significant funding must compete in this process.

Any questions regarding this matter should be directed to Dick Williams, Code ID, at (202) 358-2397.

J. R. Dailey

cc:
J/Ms. Green

DOD'S RESPONSE

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
6000 DEFENSE PENTAGON
WASHINGTON, DC 20301-6000

COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE

16 SEP 1998

98-09-22 14:12 RCVD

Mr. Lewis D. Rinker
Office of Inspector General
National Aeronautics and
Space Administration
Headquarters
Washington DC 20546-0001

Dear Mr. Rinker:

The Department of Defense appreciates the opportunity to participate in the review of the Draft Report on Review of the Aeronautics and Astronautics Coordinating Board (AACB) DoD/NASA Cooperation Initiative, Assignment No. P&A-98-003. The cooperation between DoD and NASA has resulted in many mutual benefits.

The enclosed comments update and clarify some of the report findings. DoD agrees that the AACB open recommendations should be reviewed, updated and implemented where appropriate. If further information is required, please contact Mr. Chris Andrews at (703) 607-1091.

Sincerely,

Richard M. Nutwell for

Robert M. Nutwell
Acting Deputy Assistant Secretary of Defense
(C3ISR and Space Systems)

Enclosure

DOD'S RESPONSE

DoD Comments to
Draft NASA IG Report, "Review of the Aeronautics and Astronautics Coordinating Board (AACB) DoD/NASA Cooperation Initiative", Assignment No. P&A-98-003

1. The reference on pages 1 and 3 is incorrect in stating that the DoD has been the beneficiary of more than $1Billion in savings as a result of AACB activities. The specific reference on page 3 regarding the more than $1Billion savings as a direct result of competition between the Titan IV and the Space Shuttle is erroneous. The cost savings identified were a direct result of the elimination of two launches and approximately five years of launch operations and sustaining engineering costs from the original 41 vehicle program.
2. While the DoD supports the recommendations included in the AACB report dated May 1996, some of the circumstances related to some of these recommendations have changed substantially since the AACB report was published. For example:
   - Page 5 discussed the use of some of the DoD excess ballistic missile rocket motors to launch small scientific payloads in order to reduce the cost of access to space for both agencies. At the publication of the AACB report, the Air Force was in the process of awarding a contract to use excess Minuteman II components to perform these missions. In September 1996, analysis was performed that indicated that the vehicle configuration discussed during the AACB IPT meetings would not perform as advertised. This resulted in the Air Force issuing an RFP to develop such a capability using these excess assets. The contract was awarded in late 1997. The Air Force was also required, per National Policy (PDD/NSTC-4, 5 Aug 94) to obtain Secretary of Defense approval for use of these assets. Approval was granted to convert up to five such vehicles and launch only one. This restriction will allow for the actual cost data to be developed to insure that the cost savings are in fact real to the government. The first launch of this vehicle is scheduled for FY2000. Therefore, the claim that at least $3Million will be saved per launch is premature.
   - Page 5 also discusses the potential for additional savings associated with joint spacecraft technology flight demonstrations. The DoD has been one of the largest customers of the excess available space on previous Space Shuttle missions in performing space technology demonstrations. Additionally, the DoD and NASA have been establishing additional opportunities for cooperation, such as the Air Force Research Laboratory's XSS-10 mission and the Space Maneuver Vehicle technology demonstration projects. The Air Force Research Laboratory is also evaluating the use of NASA's Indefinite Delivery/Indefinite Quantity (IDIQ) contract for satellite bus procurement.
   - Page 6 identifies the lack of standardized spacecraft control systems. The DoD Space Architect completed a study, with NASA and industry participation, that reviewed the costs and potential architectural approaches that could be taken to achieve standardization. Additionally, as the government teams with commercial industry to demonstrate new technology, the commercial sector will become more of the driver of this standardization process, since the government will be partners in the development/demonstration of advanced technology that serves both the government and private industry. These savings were not discussed at all in the report and could potentially outweigh any savings achieved between NASA and DOD cooperation.

REPORT DISTRIBUTION

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Associate Director, National Security and International Affairs Division, General Accounting Office
Special Counsel, Subcommittee on National Security, International Affairs, and Criminal Justice
Professional Assistant, Subcommittee on Science, Technology, and Space

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Senate Committee on Appropriations
Senate Subcommittee on VA-HUD-Independent Agencies
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Commerce, Science and Transportation
Senate Subcommittee on Science, Technology and Space
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on VA-HUD-Independent Agencies
House Subcommittee on National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Committee on Science
House Subcommittee on Space and Aeronautics

Congressional Members

Honorable Pete Sessions, U.S. House of Representatives, Texas

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